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Why isn't there more Financial Intermediation in Developing Countries?

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Abstract

This paper proposes to organize thinking about the opportunities for improving and extending financial markets and safety nets for the poor, by focusing on factors that may explain why the linkage of local financial networks and safety nets with the larger economy often fails or is incomplete. Understanding the nature of these impediments is the first step in proposing policies to help promote more effective linkage and intermediation. We propose four explanations for the slowness of adoption of intermediation (high costs of delegated monitoring aggravated by limited intermediary capital; lock-in and crowding out effects from local insurance arrangements, social norms against cooperation with intermediaries; and political resistance to new institutions that shift the balance of power in local polities). Of course, financial repression and weak legal systems remains important as cause of lack of intermediation. We conclude with a review of public policy for more effective intermediation.

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1 Introduction

People in developing countries participate in labour and product markets that insert them directly into national and global markets, yet they often remain relatively cut-off from the opportunities for investing, risk-spreading, and risk-taking that are potentially available in a large integrated national or global financial market. Because financial institutions are weak, and safety nets are often missing, people remain highly vulnerable to negative income shocks or other adverse events. Poor people are then forced to cancel or forego higher return activities that might have made better use of their talents and resources.

Development economists have spent much effort in recent years trying to measure the extent to which households appear to be insured against idiosyncratic shocks and the structure and performance of local financial contracts such as bilateral credit and insurance arrangements with landlords, moneylenders, family or friends, or group-based mutual savings and insurance arrangements such as ROSCAs. While these studies have advanced our understanding of local bilateral financial contracting and mutual insurance within poor communities, the study of financial *intermediation* in developing countries has remained relatively neglected. A financial intermediary expands and transforms the set of trades that can take place both within communities and across communities by carrying out monitoring and control activities and providing asset transformation services at lower cost than what could be achieved under a system of local bilateral contracts or mutual insurance arrangements (Diamond 1996).

This paper proposes to organize thinking about the opportunities for improving financial markets and safety nets for the poor. We are specifically interested in the question of what impedes more effective intermediation to link local financial networks and safety nets with the larger economy. Understanding impediments is the first step in proposing policies designed to promote more effective linkage. The rationale for policy is to have more comprehensive risk intermediation provided at lower cost to more of the poor. Public policy has both efficiency and redistributive rationales. In the longer run, a better supply of financial intermediation services will enable the poor to protect the value of consumption streams and to allocate their talents and resources to more productive, but risky or long term, activities.

What retards the natural extension of national or urban financial institutions into poor rural and slum areas? Three important preliminary observations must be made. First, a large literature has made clear that financial repression as a result of directed credit, interest rate caps, and excessive regulation and state involvement in banking, has been a principal culprit of the relative lack of more effective intermediation in developing countries (Adams et al. 1984, McKinnon 1973). In this view, a movement away from bad policies is a far more important step than any pressing need for policy innovation. Nelson (1999) summarizes the two principal reforms that, in this view, would lead to more effective financial intermediation for the poor:

> establishing permissive banking acts legalizing deposit-taking 'near-banks' but subjecting them to less onerous (and more participatory) regulatory, prudential, reporting and other requirements than major banks, and reforming usury laws on the basis of consumer information laws rather than quantitative interest rate caps.

Another related theme in this literature is that the widespread history of government failure and political capture suggests that proposals that involve regulation or intervention in markets should meet stringent tests of imperviousness to interest group manipulation.

Second, the relative absence of intermediaries may be a simple function of the low levels income and wealth in developing countries. Some authors argue that growth and financial deepening go hand in hand: as the economy grows there are more opportunities for diversification, and more opportunities for diversification in turn induces agents to invest in riskier but higher return projects, so the economy grows faster (Acemoglu and Zilbotti 1997). Intermediation, in this view, is a correlate of growth, and thus is influenced by the same institutional environment that promotes or retards growth. In a pessimistic form, this amounts to an extreme version of the induced institutional innovation hypothesis: there is little point discussing institutions, because the institutions that exist are always the ones appropriate for existing technologies and prices.

Finally, the dispersed nature of settlements in many developing countries is another obvious culprit. But low population density seems not to be a sufficient condition. Intermediation was weak and lacking in Bangladesh, a very high-density country, before the recent explosive growth of Grameen Bank and other microfinance institutions. Clearly, there have been very important changes in the technologies of intermediation that have facilitated financial market expansion even in low-density areas.

These observations suggest that the question for this paper is the following: Holding bad policy, population density, and general growth determinants constant, are there other proximate factors constraining intermediation that integrates local financial markets and safety nets with urban and national financial institutions, and is there room for innovation in public policy to overcome these? Our goal then is to investigate the factors that make intermediation expensive, focusing on factors different from, or additional to, those typically used to explain what makes local bilateral contracts expensive. We then explore whether public policy might play a role in reducing the costs of intermediation, with the caveat that proposals for public policy must pass the test of 'surviving' government failure.

We proceed as follows. Section 2 outlines what kinds of intermediaries we have in mind, and what kinds of costs and benefits they expect from transactions. Section 3 presents some evidence regarding the relative absence of these institutions in many economies. Section 4 offers a simple insurance model summarizing how information asymmetries and costly enforcement constrain contracting in agency relationships where side-contracting is possible. Section 5 then briefly summarizes recent theories of lock-in and models that incorporate more of the social and political realities of village and slum life. All of these theories place trust at the centre of the problem of intermediation. Section 6 discusses policy and innovation. Section 7 concludes.

2   Intermediaries

Our focus in this paper is on innovation in regional and national intermediation. Intermediation implies an intermediary. We are not concerned with a local director of an

informal village rotating savings and credit association (ROSCA), but rather with a person who 'delivers' financial contracts across a geographic space to a village, acting as the agent of a large-scale regional or national institution. At some point in the paper, when we speak of an intermediary, we will usually mean the actual person, rather than the institution itself. The 'intermediary', then, is shorthand for 'the agent of the institution that intermediates.'

The intermediary will usually have two 'constituencies' caring about his or her behaviour. On one side will be the local villagers who enter into contracts with the institution through the intermediary. On the other side is the institution itself, in whose name the intermediary acts. The last few decades have witnessed an explosion of research on how contracts between the intermediary and the institution, and the intermediary and his village clients, should be structured. This literature covers both financial markets and safety nets, but shares a common emphasis in modeling the contingent nature of actions that must be taken, or claims that must be settled, and consequent problem of verifying contingent states on the part of the many parties to a transaction.

Table 1 classifies the kinds of problems an intermediary might expect in carrying out different activities, for different kinds of purposes. Consider first the relatively simple transaction of transferring money to a specified individual. Western Union and other cash transfer services provide a good example of private sector intermediation that is ubiquitous in much of the developing world today. While the intermediation services that they provide link individuals across vast distances, the transacting problem they solve is relatively simple. The intermediary is mainly charged with maintaining proper accounts and with verifying the identity of the recipient of funds, rather than with verifying the applicability of contingent claims. There are clear, verifiable steps that help Western Union monitor the agents within its own network. The public, in turn, has come to trust Western Union in part because of the substantial investments it has made in local offices and publicity. These investments signal that Western Union intends to maintain a long-term presence, and therefore that Western Union is less likely to abscond with their money. The public is also generally aware that Western Union has an elaborate system for tracing and monitoring its offices and agents.

Second, consider the activities of 'pure' savings institutions. Postal savings banks, for example, are common financial intermediaries, often with branches throughout very poor countries. They provide the service of trustworthy holding of savings. The main issue is to convince depositors that their investments will be safe, and earn a sufficient rate of return. (Japan's ubiquitous postal savings institution has been criticized for advertising 'too much' the safety of deposits, leading, perhaps, to disintermediation from the broader banking system.) Informal intermediaries also exist, usually in the form of professional 'organizers' of ROSCAs. There are agency issues (intermediary or intermediary institution absconding with the money), and even the comparatively safe savings institution may be vulnerable to runs if financial management is imprudent (as in the savings and loans crisis in the United States). The intermediary does little state verification, and is again concerned more with accounting and identity verification.

Third, consider the pawnshop. Pawning is a combination of lending and insurance with collateral (Skully 1994), and pawnshops may sometimes be major sources of finance capital (in China, for example). In many of the very poorest villages of the world informal pawnshops operate to basically guarantee a market, i.e. liquidity, for non-

standard commodities (at discounted prices). Household possessions can then become, like livestock, part of a household's buffer stock strategy. The pawnshop intermediates non-standard goods between the village and broader markets. The information problem now extends past identity verification, into assessments of both the origins of the pawned goods (are they stolen?) and valuation of the goods themselves.

Fourth, consider lending and insurance. These are transactions that are much more vulnerable to agency problems, as they are dependent on private information on actions and outcomes and contingencies. (We are lumping lending and insurance together because both are state-contingent financial transactions, as loans are almost everywhere subject to possible default renegotiation.) Intermediary agents in these transactions play a much more complicated role than do intermediaries in the examples above. Borrower and claimants may have incentives to dissimulate their actions and outcomes. For that reason, intermediaries must screen applicants, monitor the actions of insurees and borrowers, verify outcomes, and transmit information and resources collected to the larger organization for which they work. The financial institution employing these intermediaries must therefore not only design contracts to limit strategic behaviours on the part of borrowers and insurees, but must also provide incentives to the intermediaries they hire to monitor and not collude with clients, in order to protect the value of investments made by savings depositors or outside creditors.

Fifth, consider national or regional safety nets. Very often urban-based welfare agents will determine whether particular persons meet welfare criteria. Why are these decisions not decentralized to cheaper, local, agents? We have discussed this question at length elsewhere (Conning and Kevane 2002). Because safety nets are funded through taxation (rather than through contributions) it is the government's money, and because the poor and vulnerable are in this case *recipients* rather than *reciprocators,* it is not clear that intermediaries will deliver the subsidy to those most in need, the way an intermediary delivers loans to those most able to repay. Redistributive programmes then involve paradoxes of targeting and possible programme capture (Gelbach and Pritchett 1997, Sen 1995).

3   The relative absence of intermediation

There is ample evidence to suggest that financial systems and local safety nets are not as integrated into the larger financial system as they could be. Many of the intermediary institutions described above have never been observed in villages and rural areas around the world. For example, despite the apparent simplicity of the transactions, Western Union had no presence in sub-Saharan Africa until 1993, when two expatriate Ghanaian financial entrepreneurs convinced the conglomerate to commence operations in Ghana. In the following eight years, Western Union expanded throughout the continent into 47 countries, transferring roughly one billion dollars per year. In South Africa alone Western Union processed 3.2 million transactions in 1999, but it was only in May of 2001 that the company opened a regional office.

The recent expansion of microfinance institutions throughout the world suggests that supply-side innovations are important. West Africa, for example, has seen an explosion of interest in microfinance in the past decade. Most villages were completely cut-off from even these modest micro-loans prior to this credit boom (Kevane and MkNelly

2001). Many microcredit institutions now have almost a decade of sustained, and close to sustainable, intermediation. Clients continue to borrow event though it is now apparent that the financial services are the only 'benefit' from participation.[1]

The expansion of South Africa's pension system to black citizens is also telling (Case and Deaton 1998). Clearly, here was a case of widespread demand for pensions, and a politically-motivated constraint on supply. The electorate is overwhelmingly in favour of a state-sponsored pension system for the aged. It is more than likely that other African countries have similar voter equilibria where national-level pensions would be demanded. Moreover, existing pension and social safety nets seem to suffer from serious problems of intermediation, in the sense that agents responsible for distribution to individuals in localities do very poor jobs of targeting.

For the informal sector, there is mixed evidence on the relative size and functioning of informal local and regional intermediation for credit and insurance. Self-sustaining credit and insurance networks offer partial insurance because of problems of information or limited commitment, even within the close quarters and repeated interaction of village life (Coate and Ravallion 1993, Fafchamps 1996, Kimball 1988, Ligon et al. 1999). The weight of evidence suggests that informal insurance mechanisms are seriously incomplete (Morduch 1995, Townsend 1994). More recent research rejects even the hypothesis of complete sharing of risks within families (Dercon and Krishnan 2000, Goldstein 2000). As for regional networks, Grimard (1997) presents evidence suggesting that ethnic groups occupying large spaces in Cote d'Ivoire do practice income sharing. Udry (1994), on the other hand, finds that local state-contingent contracts common in northern Nigeria do not extend to inter-village financial arrangements.

The discussion above suggests that intermediation of financial contracts and safety nets is impaired because of problems on the supply side of the market. Private sector intermediary institutions have not stepped in to take advantage of seemingly large arbitrage opportunities. State and local governments, and national non-governmental organizations, have eschewed local intermediaries for targeting available resources for public safety nets and poverty alleviation.

4   Lack of intermediation arising from agency problems

As Table 1 suggested, there are numerous layers of contracting that a financial institution or policymaker must take into account when assessing intermediation possibilities. First, the intermediary institution must motivate and solve asymmetric information with its own employees, and its own depositors or creditors. Second, the intermediary institution must find contractual forms that ensure profitability when lending to or insuring clients, or that achieve the desired targeting, in the case of a safety net. Third, the intermediary institution must anticipate and may possibly want to

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[1] Many villagers may have joined microfinance schemes expected to receive non-pecuniary benefits, or even village public goods such as schools or dispensaries. Most microfinance institutions, however, do not provide public goods; nor do they necessarily do a good job of 'empowering' women through collective mobilization.

regulate or harness the side-contracts that agents and clients' can strike up amongst themselves, or with other persons or competing institutions.

Understanding the nature and potential impacts of such side-contracting activities lies at the heart of any theory of financial intermediation because side-contracting with a third party typically changes the incentives faced by the parties to a bilateral contract. The inability to rule out or properly regulate some sorts of side-contracts with third parties may be deleterious to one or both parties to a contract, and therefore may 'crowd-out' certain types of beneficial transactions. In other cases, side-contracts amongst locals, or with other financial intermediaries may well be beneficial to an outside institution transacting with locals; side-contracts may actually serve to 'crowd-in' local or outside resources and permit transactions that would not have taken place.

The design of structures that will promote financial intermediation involves deciding which side-contracts to allow or to internalize within the institution, and which to exclude or try to regulate. The impact of potential side-contracting and collusion has been discussed in the theoretical literature, for example in the context of risk-sharing and moral hazard models of Itoh (1993), Holmstrom and Milgrom (1990), Arnott and Stiglitz (1991), in financial intermediation models of Conning (2000) and Laffont and Rey (2001), as well as in the industrial organization literature (Laffont and Tirole 1993). Our purpose in this section is to synthesize and illustrate several key results via a simplified model of risk-sharing and moral hazard, emphasizing policy relevance in developing countries.

We begin with a very standard analysis of insurance in the presence of moral hazard and then progressively complicate the model by allowing for different types of side-contracts amongst agents. The focus is on the problem of moral hazard that arises when a villager's level of diligence cannot be costlessly verified and specified in a contract. We compare the types of financial contracts that can be established by an outside risk-neutral financial institution and agents in the village under alternative scenarios about agents' ability to side-contract with each other. Examining and comparing each of these alternative scenarios clarifies when local contracting crowds out, or crowds in, new outside financial services. The model also offer insights into the use of delegated monitoring and emergence of financial intermediation, and effects that monitoring costs, transaction costs, and village power dynamics can have on the shape and welfare consequences of financial contracting.

In the analysis that follows, we use the word 'villager' or 'agent' to describe the clients, and financial institution (FI) to describe the outside provider of financial services, recognizing that the kind of clients we are discussing are also rural dwellers who live from non-farm incomes, or slum dwellers in cities, and that many of our examples concern insurance, rather than loans.

4.1 Case 1: Individual contracts, side-contracting prohibited

Think of a very simple village where there are only two villagers or agents. Each villager has access to a single risky production project and the two projects are stochastically independent. The outcome on the project will be affected by the agent's actions. If the agent is diligent he incurs disutility of effort D and his project succeeds to yield an outcome X_s with probability p_s or fails with probability p_f ($= 1 - p_s$) to yield

outcome $X_f < X_s$. We think of D as the disutility of effort or diligence on the project. A non-diligent agent does not lose D, but lowers the probability of success from p_s to $q_s < p_s$.

Each villager may be able to contract with the other villager and/or with an outside financial institution. The terms of these contracts determine villager 1's state-contingent consumption bundle $c_{ij}^1 = \{c_{ss}^1, c_{sf}^1, c_{fs}^1, c_{ff}^1\}$. To simplify the exposition, assume that agent 2 always chooses to be diligent (or equivalently that he can always enter into action-contingent contracts), so only agent 1's actions are subject to moral hazard. For future use let $p_{ij} = p_i^1 p_j^2$ and $q_{ij} = q_i^1 p_j^2$ where $i,j = s,f$.

When villager 1 is diligent his expected utility under contract(s) c_{ij}^1 can be expressed as $Eu(c_{ij}^1 \mid p_{ij}) = \sum_i \sum_j p_{ij} u(c_{ij}^1) - D$. We note however that optimal contracts might offer payoffs independent of the state of the other agent's outcomes.

We follow the convention of the literature and only consider the 'implementation problem' of the FI. That is, we look for the contracts that provide insurance to the villager(s) and ensure the diligent action by the first agent, at lowest cost to the principal (in this case the FI). How the resulting surplus is actually divided between the FI and the agents is not important for the problem at hand – we could just as well be looking at contracts where the FI only wants to break even and leaves all surplus with the villagers. Our goal here is to offer the reader a simpler and more policy relevant version of the general results established by Itoh (1993).

To begin, we assume the FI contracts with each villager separately using *exclusive* contracts that prohibit any type of *side-contracts* amongst agents. The FI seeks to provide insurance/loans to the agents so as to maximize the value of expected repayments $R_{ij}^1 + R_{ij}^2 = (X_{ij} - c_{ij}^1 + c_{ij}^2)$ net of any fixed costs or opportunity cost of funds, where $X_{ij} = X_i^1 + X_j^2$. If we think of F as the opportunity cost of any loan advances and/or as the fixed costs of transaction, then the FI would like to choose $\{c_{ij}^1, c_{ij}^2\}$ so as to maximize $\sum_i \sum_j p_{ij}(X_{ij} - c_{ij}^1 - c_{ij}^2) - F$ subject to villager 1's incentive compatibility constraint and each villager's participation constraint. Equivalently, the FI chooses a contract to be the solution to :

$$\min_{c_{ij}^1, c_{ij}^2} \sum_i \sum_j p_{ij}(c_{ij}^1 + c_{ij}^2) \qquad (1)$$

$$\sum_i \sum_j p_{ij} u(c_{ij}^1) - D \geq \sum_i \sum_j q_{ij} u(c_{ij}^1) \qquad (2)$$

$$\sum_i \sum_j p_{ij} u(c_{ij}^k) - D \geq \overline{U} \quad for \ k = 1,2 \qquad (3)$$

Plainly, when the project returns are independent and the agents cannot observe each other's actions, no relative-performance evaluation considerations apply and the optimal contract offered to each agent will be an individual contract in which each agent's

payment is not made contingent on the outcomes of the other agent's project (i.e. $c_{ij}^1 = c_i^1$, for $i=s,f$).

The incentive compatibility constraint of agent 1 can be expanded and rearranged to yield:

$$u(c_s^1) - u(c_f^2) \geq \frac{D}{\Delta}$$

where $\Delta = p_s - q_s$. Any contract that is to implement diligence must offer the agent a higher expected utility under project success than under failure, so as to give him an incentive to want to raise the probability of success via diligence. For this to be the case, the villager must be made to bear risk. The feasibility of such a contract between the FI and the villager thus depends on the cost of diligence (which may in turn depend on the level and effectiveness of monitoring by the FI or its delegates, as discussed below), how diligence raises the probability of success, the villagers' degree of risk aversion, and the FI's fixed costs F. Villager 2's actions are by assumption verifiable, so an optimal contract can provide full insurance and the agent will receive a fixed payment regardless of the state.

This is the standard moral hazard problem analysed in the literature. The assumption of exclusive contracts, or no side-contracting amongst agents in the village, is not very realistic however. For instance, it is quite likely that local mutual insurance arrangements exist in the village before the arrival of a new FI, and villagers will be quick to establish new financial side-contracting arrangements to take advantage of any new trading opportunities that could arise due to the arrival of an outside financial institution. In such contexts, it is natural to ask whether such side-contracts will help or hinder the villagers' access to outside financial services.

This question has been studied in some depth in the theoretical literature (Arnott and Stiglitz 1991, Holmstrom and Milgrom 1990, Itoh 1993, Varian 1990), but has not often been translated into policy relevant lessons. A quite general proposition that runs across all these studies is that if agents can only side-contract on the same observable outcomes or actions that an outside financial institution could have itself included in the contract, then such side-contracts can never improve, and may possibly harm, the villages' ability to access financial services. On the other hand side-contracts may be potentially useful and actually serve to 'crowd-in' financial services if local agent's can side-contract on actions or outcomes that the FI would not itself be in a position to observe or verify, and the FI can design a contract to take advantage of this. Crowding in of this sort, we will argue, is at the heart of what financial intermediation is all about. It will be useful and interesting to briefly review some of these results in the context of the very simple model of moral hazard we have already introduced:

4.2 Case 2: Crowding out due to side-contracting on observed outcomes

Suppose the village is as before but we now introduce the possibility that after accepting the contracts offered by the financial institution the two agents can enter into side-contracts for the purpose of further mutual insurance. First, we consider the case where agent 2 cannot observe agent 1's choice of diligence, but like the FI, does observe the outcome of both projects. In this context side-contracts amongst agents can only be

made contingent on the very same publicly observable outcomes upon which the financial institution relies in its own contracting with villagers.

Recall that, by design, the optimal individual contracts offered by the financial institution in case 1 above left agent 1 imperfectly insured whereas agent 2 was perfectly insured. This situation leaves open the possibility that agents 1 and 2 might both find it profitable to agree to a mutual insurance side-contract arrangement. But such an arrangement might then disrupt agent 1's incentive to remain diligent and hence may harm the financial institution.

If the financial institution cannot legally or physically forbid this type of side-contracts, it must at least take this into consideration when deciding whether or not contracting is worthwhile in the first place, and in designing the optimal contract. Since the FI can always reproduce whatever side contract the agents have in mind, without loss of generality we can restrict attention to contracts that provide incentives against further side contracts or coalition-formation. Following (Itoh 1993) we refer to such contracts as *coalition-proof.* As first observed by (Holmstrom and Milgrom 1990) and (Varian 1990), requiring the contract between a financial institution and a group of agents to be coalition-proof implies that the contract satisfy an additional set of constraints compared to case where side-contracts are exogenously prohibited. This can only possibly reduce the feasible contract set, leading to crowding out.[2]

Consider the following simple and related application of this principle that highlights the intuition. Suppose an outside institution is not aware that the village organizes a mutual aid programme to meet basic needs (regardless of actions). That is, the village has a local safety net that prevents either agent's consumption from falling below some minimum threshold in any state. The availability of the safety net means that the consequence of crop failure is not so serious anymore for a client, so interest in being diligent when contracting with outsiders is dulled. Incentive-based contracting with outside financial intermediaries becomes more difficult or impossible.

This intuition shows why pre-existing local mutual insurance arrangements may delay the entry of new forms of outside finance, or equivalently, why new outside intermediaries may crowd-out pre-existing local insurance arrangements. Recent attention has focused on this last possibility. For example, Attanasio and Rios-Rull (2000) present evidence that suggests that Mexico's PROGRESA social safety net programme crowded out local insurance. In our view, there is not yet enough evidence to decide on just how important and general the issue really is (see Morduch 1999, for a more detailed discussion). Moreover, it is not even clear that local insurance should necessarily be presumed to have 'existed' prior to intermediation, and thus has been more in danger of being displaced; many NGOs spend considerable effort and resources promoting local mutual insurance, rather than encouraging intermediation. Additionally, globalization and increasing market opportunities have been changing households outside opportunities anyway, and these processes have on their own led to breakdowns in local sharing networks and institutions, leaving some households more vulnerable. To not offer social safety nets, or not encourage outside private intermediation, for fear of

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2   If utility is transferable, the new constraint will be that the marginal utility of each agent in each state must be identical. If utility among the agents is not transferable, then the new constraint will be that their marginal rates of substitution be equal (Itoh 1993).

disrupting local insurance networks in this context may be the romanticizing a past that will be soon gone anyway, and risks leaving vulnerable households in the transition.

More fundamentally, the ability of locals to side-contract may at times actually be an asset for 'crowding-in' rather than crowding out new financial services. Financial innovation is in fact all about finding new ways to leverage local information and enforcement mechanisms to expand the range of contracting options. To understand these issues better, and to see how this leads to a discussion of delegated monitoring, we turn next to see how a variation on the same simple contracting model can produce 'crowding-in.'

4.3 Case 3: Crowding-in by harnessing agents' ability to side-contract on actions.

Suppose that the situation is now as in case 2, but that agent 2 can also now perfectly and costlessly observe agent 1's actions. Agent 2 can therefore enter into an action-contingent side-contract with agent 1, while the financial institution cannot contract on agent 1's actions. If the outside financial institution can harness this extra 'closeness' between agents, it may enable greater access to financial services.

There are two cases to consider, the first where the agents can transfer utility directly, and the second where they cannot transfer utility and can only contract for state-contingent payments of goods. The problem that the FI faces in the first case, with transferable utility, is to minimize (1), the expected cost of implementing diligence, subject to,

$$\sum_i \sum_j p_{ij}\left(u(c_{ij}^1)+u(c_{ij}^2)\right)-2D \geq \sum_i \sum_j q_{ij}\left(u(c_{ij}^1)+u(c_{ij}^2)\right)-D \qquad (4)$$

$$\sum_i \sum_j p_{ij}\left(u(c_{ij}^1)+u(c_{ij}^2)\right)-2D \geq 2\overline{U} \qquad (5)$$

$$u'(c_{ij}^1)=u'(c_{ij}^2) \quad \forall i,j \qquad (6)$$

Since the two agents can make side payments that transfer utility they will choose as a coalition whether or not to be diligent. The incentive compatibility constraint (4) and participation constraint (5) therefore reflect the fact that the agents, acting as a coalition, act to maximize the utility achieved by the group, which they will then redistribute according to some mechanism internal to the village. Since the financial institution cannot legally or physically forbid this type of side-contracts, it must at least take this into consideration when deciding whether or not contracting is worthwhile in the first place, and in designing the optimal contract. Since the FI can always reproduce whatever side contract the agents have in mind, without loss of generality we can restrict attention to contracts that provide incentives against further side contracts or coalition-formation (Tirole 1992). The coalition-proof constraints (6) capture the fact that agents will always want to efficiently contract for mutual insurance within the coalition, and therefore the marginal utility of consumption in each state must be the same for the two agents.

The financial institution can take advantage of the ability of agents to side-contract on actions to provide more risk-sharing services without disrupting agent 1's incentives to

be diligent, and despite the fact that the agents can side-contract on outcomes, as in case 2. When agents can side contract on outcomes but not on actions (i.e. case 2 above) the contract must satisfy the coalition-proof constraints (6) and an individual level incentive compatibility constraint like (2) on agent 1. When agents can also side-contract on actions, the coalition-proof constraints (6) must still be satisfied but now (2) can be replaced by a coalition-level incentive compatibility constraint (4) that is easier to satisfy. Intuitively, the FI can now provide more risk-smoothing to agent 1 and to the village without disrupting incentives because agent 2's 'monitoring' of agent 1 keeps the latter diligent even in circumstances where the individual IC constraint (2) would not be satisfied.

We say that agent 2 'monitors' agent 1 because agent 2 has the incentive to enter into a binding coalitional side-agreement with agent 1 to keep agent 1 diligent. The contract has, in effect, hired agent 2 to act as a delegated monitor. But the cost of ensuring that agent 1 is diligent (which increases the available resources to the village as a whole), is that agent 2 must be made to bear some risk. Like agent 1, agent 2 must be made to consume more following agent 1's project success compared to failure, in order to have an incentive to enter into a side-agreement to 'monitor' agent 1. Itoh's (1993) remarkable paper demonstrates more formally that this monitoring with side contracts will in general be better than no monitoring and no side contracts (case 1 above). Itoh extends his results to the case of non-transferable utility, demonstrating that agent side-contracting or monitoring can still be of advantage to the principal, but not always.

4.4 Case 4: Costly delegated monitoring

The assumption that agents can costlessly observe and side-contract on both actions and outcomes has been commonly employed in the literature on peer-monitoring. For example, Stiglitz (1990) assumed costless side-contracting to model peer-monitoring within group loans. Group loans work in this setup by harnessing an assumed ability of borrowers to side-contract on actions whilst outsiders cannot enter into such contracts. The perfect and costless side contracting assumption is not very realistic, however. It means that clients can perfectly contract ('collude' or 'cooperate') amongst themselves without cost to coordinate their actions, as if the village were a single syndicate. If taken literally it implies that consumption pooling should always hold within the village, and that the optimal intermediary structure should always extend to include the entire village.3

A more realistic assumption is that action contingent contracting is difficult and imperfect, but that locally informed agents may have an advantage over outsiders in carrying out *costly* monitoring and control activities. Understanding how the actual costs of monitoring and the delegation costs of motivating monitors rise or fall with different choices over borrowers, delegates and contract terms is an essential ingredient in understanding the possibilities and limits of financial intermediation in developing countries.

Once the FI takes into account that side contracting and monitoring are costly activities, then it will care about what villager is the delegated monitor. Some will be better placed

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3 Economists have already abandoned the assumptions of the unified household model. A unified village model seems therefore even less plausible.

than others to carry out this function. The agents most attractive for intermediation with villagers are those who have good information or monitoring abilities, i.e. those who are 'close' to villagers. But these potential agents are themselves often poor, and so may be unwilling or unable to accept high-powered incentive contracts that call for them to accept significant downside risk when the projects they monitor turn sour. It should be clear from our earlier discussion that a less-risk averse agent 2 makes for a better delegated monitor. To have incentives to monitor,[4] the contract must make agent 2 bear risk, and the delegation costs associated with providing such incentives will be smaller the less risk averse is agent 2.

To analyse the role of costly delegated monitoring in financial intermediation in more detail it will be useful to simplify and adapt the model further. Since a less-risk averse agent 2 makes for a better monitor, let us assume for simplicity that agent 2 is actually risk neutral. Furthermore, assume agent 2 no longer has his own risky production project. Rather, his earnings will now be determined entirely by his contract as a delegated monitor, which will be tied to the performance of agent 1. The contract is designed by the FI exclusively for the benefit of agent 1, and therefore that the delegated monitor and the outside financial intermediary are kept at their participation constraints.

To capture the idea that monitoring is a costly and imperfect activity, we adopt a simple specification borrowed from the financial contracting literature.[5] A local delegated monitor can, at a monitoring cost m, reduce the private benefit that an insured farmer stands to gain from non-diligence (or lower the cost of being diligent) from D to $d<D$. Think of m as the labour effort that the monitor must expend in frequent visits, inspections, and social work[6] and d as the lower net private benefit that agent 1 gets from being non-diligent when he is monitored and pressured by agent 2. Outsiders might also try to monitor the insured farmer themselves, but they can only do so at a higher cost $M>m$, which is in general prohibitive.

The contract design problem can now be stated as:

$$\max_{c_i^1, c_i^2} \quad Eu(c_i^1 \mid p) - d \qquad (7)$$

$$E(c_i^1 \mid p) - d \geq E(c_i^1 \mid q) \qquad (8)$$

$$E(X_i - c_i^1 - c_i^2 \mid p) \geq 0 \qquad (9)$$

$$E(c_i^2 \mid p) - m \geq E(c_i^2 \mid q) \qquad (10)$$

$$E(c_i^2 \mid p) - m \geq 0 \qquad (11)$$

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4   We say 'have incentives to monitor' to mean 'have incentives to enter into an action-contingent side-contract with agent 1'.

5   See for example (Holmstrom and Tirole 1997, Hoshi et al. 1993) and (Conning 1999).

6   Note that m could include helping actions to help the farmer prevent failure. In general a 'monitoring action' is any action that helps raise the rewards to diligence and/or lower the rewards to non-diligence.

The first three expressions make this problem look just like the individual contract design problem except that now d replaces D, to capture the idea that costly monitoring expenditure by agent 2 in the amount m can directly lower agent 1's scope for moral hazard, and now the FI is, in effect, making payments to agent 2 that are contingent on the outcomes of agent 1, in order for agent 2 to carry out this costly monitoring.

The potential benefit of monitoring is to relax the incentive compatibility constraint (relative to what it would be if the FI contracted without a delegated monitor) and hence allow the FI to provide agent 1 with better insurance without disrupting incentives. The benefits of monitoring must however be weighed against the costs. The costs to the outside insurer of using a delegated monitor will in general be more than m. This is because the monitor's actions are also subject to moral hazard, since the monitor can always claim to have monitored even while in fact they did not. The monitor's remuneration can be tied to the only available observable outcome: whether or not agent 1's project succeeds or not. The monitor's remuneration c_i^2 must therefore satisfy the monitor's incentive compatibility constraint (10) which can be expanded and rearranged to give:

$$c_s^2 \geq c_f^2 + \frac{m}{\Delta}$$

The monitor must be paid sufficiently more for agent 1's successful outcomes and penalized for failures so as to have an incentive to monitor, and hence raise the probability of success. For a given fixed level of c_f^2, the incentive constraint means that the intermediary must earn expected remuneration of at least:

$$E(c_i^2 \mid p) = pc_f^2 + (1-p)c_s^2 = c_f^2 + p\frac{m}{\Delta}$$

This amount must be enough to bring the monitor out of her next best occupation, which we assume in (11) is zero. The monitor's participation constraint can therefore be written:

$$E(c_i^2 \mid p) - m = c_f^2 + p\frac{m}{\Delta} - m \geq 0 \qquad (12)$$

This is the minimum expected remuneration that a delegated monitor must receive if both his incentive compatibility and his participation constraint are to be met. The size of c_f^2 remains to be determined. Note that if we set $c_f^2 > m - p\frac{m}{\Delta} < 0$ then it must be the case that (11) is met with slack and the delegated monitor earns expected payment in excess of his reservation utility of zero. We interpret a strictly positive $E(c_i^2 \mid p) - m$ in expression (12) as an information rent, or *delegation cost*. Since this delegation cost is necessary to sustain monitoring incentives and reduces the project surplus to be divided, higher delegation costs lower the possibilities of financial intermediation.

What determines the size of delegation costs? From the expression it is clear that the cost of monitoring m, as well as the incremental impact of diligence Δ, both matter. The size at which c_f^2 is set also clearly matters. If there were a competitive market for

delegated monitors in the village, and would-be-delegates had capital of their own to place at risk, then delegates could compete for the position by offering to accept a lower (negative) c_f^2. From (12) it is clear that the delegation cost can be made negligible if potential monitors able to accept a large enough negative payment in the failure state. One interpretation of a negative c_f^2 is that the delegated monitor is acting like a local financial intermediary, using his own money to acquire an equity stake in agent 1's project, and by so doing, leveraging or 'crowding-in' additional resources from an outside FI that otherwise would possibly not have been willing to enter into the arrangement.

The discussion suggests that local agents with some intermediary capital of their own to start with are more likely to intermediate between the village and outsiders. The dearth of capital or diversification activities in poor areas may mean however that it will be difficult for agents who provide local insurance (e.g. small time moneylenders, shopkeepers, etc) to become true intermediaries by leveraging outside resources. The reason is that if the delegated monitor is not willing to put at risk the full amount $p\dfrac{m}{\Delta}-m$ in the failure state, by (12) the monitor must earn a rent, and the feasible set of contracts shrinks as this rent grows. If the delegate is just a simple hired insurance agent or loan officer for the FI, c_f^2 below zero may not be possible for institutional reasons, or because of the local agent's limited net worth. If $c_f^2 = 0$ then the delegation cost becomes strictly positive $p\dfrac{m}{\Delta}-m>0$.

Diamond's (1984) seminal work on financial intermediation pointed to a very important implication of delegation costs.[7] Delegation costs arise because of the need to provide incentives in an environment where intermediary capital is limited. The problem is that delegated monitors cannot be made to pay out when the projects of the farmers they monitored failed. If however a delegate is put in charge of monitoring several projects at once, and if those project returns are imperfectly correlated, then an intermediary is more likely to be able to cover the losses on one project out of the 'bonus' received from another project succeeding. In the model above this means that the minimum threshold amount of intermediary capital would be lower, the more diversified are the pattern of returns in the village. Diamond argued, very insightfully, that monitoring is delegated to specialized financial intermediaries such as banks, precisely for this type of reason.

Unfortunately, an intermediary is often a good monitor because he or she knows a lot about a specific area or line of business, but the correlation of project returns within such groups is likely to be high, so incentive diversification opportunities of the sort identified by Diamond are likely to remain limited in rural areas and other economies were both diversification opportunities and local intermediary capital are limited. This may be one reason why microfinance has tended to be more successful in urban settings than rural settings (at least in Latin America).

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7 Diamond's focus was slightly different: his was a model of costly state verification.

5 Other theories of the lack of intermediation

The discussion above developed the standard model of asymmetric information leading to moral hazard and hence less financial intermediation that one might expect. Models of asymmetric information leading to adverse selection would have the same effect. In this section we consider a group of more eclectic models that explain the slowness in adoption of financial intermediation. the models and discussion emphasize the sources of the asymmetric information (in terms of trust being generated endogenously, or being affected by other, historical factors), and how non-economic considerations might prevent intermediation.

5.1 A network approach

Network approaches focus on the inertia of a system locked-in to an existing, but perhaps increasingly inefficient, set of overlapping, informal, local insurance arrangements and safety nets. Gilbert (1999) conjectures that these informal arrangements may deter development of more sophisticated intermediation:

> many African farmers are implicitly co-insured within the village or extended family. This makes the purchase of insurance unattractive since the benefits from payoffs would be partially disseminated across the community while the costs remain theirs alone. A move towards the market requires that farmers become more atomistic in their behaviour.

There are two interpretations here. One is that villagers may be implicitly required to participate in a kind of basic needs insurance as part of their membership in the village community. In that case outside insurance for particular risks (price risk in Gilbert's case) is less valuable for the villagers; they cannot 'opt out' of the broader basic needs insurance. The other interpretation is that while these arrangements may have been the best possible given the constraints on larger-scale intermediation, the inefficiency becomes greater as the constraints on formal intermediation are relaxed through investments in public infrastructure, more effective technology, and improved reputation of formal institutions. Now, given a choice between local, informal insurance and intermediated insurance, people might prefer intermediated insurance. But the pre-existence of the local insurance network inhibits the switch to the new technology of intermediation.

A coordination problem exists: only if sufficient numbers of local residents make the switch to intermediated insurance will it gain the acceptance of others, but no individual has incentives to make the switch before the others. In the case of publicly subsidized safety nets, many authors have noted that offering such 'free' outside insurance immediately begins an unraveling of the local insurance arrangement. But for private intermediaries it is not clear whether offering initial subsidies will be an equilibrium strategy when the subsequent market for intermediated services is competitive.

Consider a simple model where agents have productive activities that generate one unit of 'extra' consumption goods in alternating years. These goods cannot be saved. Each person also has a stock of illiquid wealth that yields basic consumption (so the marginal utility of consumption in the years when a person does not get extra consumption is not infinite). Obviously, the villagers can work out a sharing arrangement that is

self-enforcing, if the game is repeated, where the degree of sharing depends on the degree of impatience of the agents and their relative bargaining power. The agent who gets the extra amount weighs the utility from consuming all of it against the loss of future smoothing. Now further suppose that each successful round of consumption smoothing builds up trust among the members according to a simple, decreasing returns function, and that this trust is a valuable stock that evaporates when someone cheats on the agreement or terminates the arrangement. As trust accumulates, the discount rate required to sustain the arrangement becomes less and less difficult to meet. Then the age of any particular local insurance arrangement determines the penetration capacity of an outside intermediary institution offering consumption smoothing services (through savings, for instance). Since the profitability of the outside institution also depends on the trust that it accumulates, it may not be able to penetrate villages with established local arrangements, even if its trust-generating technology is superior to that of the local arrangement.

It may be the case that imposing regulatory hurdles breaks down these informal, local arrangements and leaves the field clear for larger-scale intermediaries with better finance and trust-building technologies. A number of authors have hypothesized this effect, or even advocated it. Bossone (2000, pp. 19–20) notes that the 'franchise' value of an intermediary, by which he means the value of the reputation built up through honoring promises for quality service, improves the quality of financial intermediation:

Only a positive net franchise value from intermediation may attract investment in reputational capital from financial institutions. Use of mild regulatory restraints on market competition might increase the franchise value of domestic institutions, especially in least developed countries and in those emerging from long periods of financial repression… restraints such as (market-based) deposit rate ceilings and restrictions on market entry may have large rent creation effects that would allow banks to raise profits during the phase of initial reform (Bossone 2000, pp. 19–20)

Some economic historians have hypothesized that national regulatory intervention factored in undermining local financial institutions and safety nets.[8] Regulations created a national market, with concomitant costs and benefits. One should not be too optimistic about this line of thinking in terms of actual implementation; the potential for 'government failure' applies, and legislatures or regulators may misread the nature of lock-in and destroy useful trust in a misguided attempt to generate economies of scale or scope.

5.2 Social norms against cooperation with intermediaries

We may approach from an historical perspective the issue of origins of differential comparative trust in local versus outside financial institutions. Local groups have numerous norms that restrict economic activities. Many African societies have prohibitions on selling land to outsiders. Many have similar restrictions on where and to

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[8] Even the successful industrialized economies have followed very different institutional development paths, and that more than one set of institutional arrangements for finance may emerge as equilibrium in a national economy, as the contrasting experiences of the United States and Germany suggest (Holmstrom 1996).

whom women of the village may marry. It is not too far to imagine that village societies have similar norms against revealing information to outsiders, particularly against selling information for profit.[9]

Such a collusive norm of non-cooperation norm may have arisen in response to shared experiences with intermediaries in colonial regimes. In peasant societies under colonialism, especially in areas of indirect rule, the 'agent' of the state, often a villager appointed because of his skills at translation, or willingness to curry favour with outside administrators, was able to link intermediation with monopoly over force, and so made people worse off. The relationship between peasants and colonial agent was quite literally a prisoner's dilemma, with the peasants as prisoners and the agent as jailer, and local norms developed to solve that dilemma. One can imagine a repeated prisoner's dilemma game, where villagers know that only randomly does the agent 'offer' a game where cooperation yields high payoffs. A sustainable strategy may be to never cooperate with the agent. And of course, from the villagers perspective the agents of the formal economy and state are one and the same; they collude and act together to extract resources from the villagers.

The state and villagers are continuously bargaining over division of local surplus. A change in relative threat points then changes the outcome of bargaining. A village decision to cooperate with intermediaries, seemingly in their interest, may lead to a change in threat points that could make villagers worse off. The problem here is the state or intermediary cannot credibly commit to refrain from using new information or resources or shift in threat point to extract more resources, rendering the village worse off.

The question then becomes how quickly these village norms against cooperation erode when more and more opportunities for profitable cooperation with intermediaries arise and when the link between formality and abuse of power diminishes. It should be recalled that the distinction between colonial and post-independent regimes has not been sharp, in terms of the exercise of arbitrary power. Contemporary regimes quite often use the same tactics of inviting intermediaries, even business intermediaries, to monopolize force.[10] There are few distinctions to be made, then, between agents of the police and agents of formal institutions; from the point of view of the villagers they work closely together. A villager who becomes an agent of a formal institution comes closer to the locus of power, and comes closer to being able to exercise power himself.

Ironically, much recent public policy on intermediation is premised on the assumption that local social pressure can be used to reinforce the contracts entered into by the intermediary. But social pressure often works in quite the opposite direction: rather than generating peer pressure to repay, local society generates peer pressure not to 'fink' on a recalcitrant non-repayer.

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9   Platteau (2000, pp. 12–4) notes that revealing information even within a village may be subject to numerous constraints having to do with face-saving and avoiding retaliation.

10   Many of the problems of the oil multinationals in Nigeria stem from their willingness to blur the lines between their representative, who intermediate with villagers over contracts and access, and the repressive state military.

5.3 A standard local political economy argument for opposition to intermediaries

Local politics is the mechanism through which local public goods are created and distributed and the local economy is regulated. Control over these processes yields benefits to those in power, benefits that are contested in the local political arena. Like any political system, maintaining power depends on relative, rather than absolute, differences in the ability to influence or persuade voters. Programmes introduced from the outside are vulnerable to capture or misuse. Bardhan and Mookherjee (1998) develop a model that illustrates some of the important parameters that determine the degree and effects of programme capture.

Comparatively neglected in this literature is the endogeneity of programme placement; if the decision about whether to allow or enable an intermediary to enter the village in the first place is a political decision taken locally, the political process may stymie the efforts of the intermediary to enter. This may happen despite the intermediary's potential to improve financial services for most in the village. If the service disturbs the relative balance of power within a village, it may be blocked.

The social distrust and political economy problems of intermediaries perhaps explain why so many microfinance institutions are reluctant to squarely address the fact that their services rely on the unpaid labour of a village president and treasurer, who are entrusted with basic bookkeeping, enforcement and monitoring tasks. These villagers ought to be the ideal recruitment ground for a new category of intermediary agent placed on incentive contracts. The reluctance of microfinance institutions to hire local people to carry out tasks is strongly suggestive of the seriousness of the problems discussed above.

6 Public policy to improve intermediation

The theoretical discussion of the preceding two sections has some implications for policy. The challenge is to generate institutional innovations that will more quickly address the problem of delivering financial intermediation to the most poor. Such innovations serve two functions of potentially offering self-selecting redistribution with less leakage and also relieving the inefficiencies associated with low asset positions impeding choice of productive activities. These innovations may be in the formal or informal spheres. For the formal sphere, the development literature is filled with examples of failed imported institutional innovation. The dismal record of credit cooperatives of the 1970s is a case in point. Another is the attempt by colonial government to introduce courts and land as collateral to facilitate the development of credit.[11] These failures highlight the need for continued learning and experimentation. We offer a few observations and suggestions below.

Governments are usually less informed about local economic circumstances compared with private parties. Thus, the main role for public policy in fostering and promoting greater levels of intermediation are twofold. First, removing entrenched restrictions, such as hurdles for the legal establishment of financial providers to the poor, draconian

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[11] Kranton and Swamy (1999) examine the experience of India.

anti-usury laws, etc. At best, these laws often are ignored in the breach, and cause financial firms to obfuscate their records. At worst, they completely stymie formal sector intermediation. Second, providing essential public good inputs, as in a legal system that might facilitate lower cost third-party enforcement of contracts, prudential regulation, or legislation to promote public or private credit bureaus that improve the distribution of verifiable credit histories.[12]

Most developing countries have a long way to go in terms of implementing such public policy interventions (or non-interventions as the case may be). Moreover, successful public action along these lines cannot be quick, which is unfortunate for the poor. For infrastructure investments (in legal systems) to promote trust and lower the cost of contract enforcement, they have to become legitimate. They have to become the 'rules of the game' that are no longer contested. Legal capacity and financial institutional infrastructure is developed in the process of making and enforcing real decisions, not by passing laws and training bureaucrats.

These reforms will not be enough. Even with more efficient private sector intermediation, a large number of poor and vulnerable households would remain imperfectly insured and with limited access to credit. This is because of limited wealth, moral hazard and adverse selection problems., and the other local social and political problems discussed above Public policy and pro-competitive policies may reduce these barriers, but irreducible transaction costs and other trading frictions are nonetheless likely to remain.

The lessons of the moral hazard approach to intermediation suggest that policies to support the creation of more financial intermediation should focus on 'growing' intermediary capital. Donors may be encouraged to make equity investments in the funds of microcredit and microinsurance organizations. Similarly, policies by microfinance organizations to build up capital locally though deposit mobilization and new savings instruments can help organizations build up intermediary capital and then leverage outside funds more effectively.

The promotion of 'sustainable microfinance' in policy circles in recent years has helped focus attention on the role of hard budget constraints and incentives. But hard budgets are in principle also consistent with subsidies to the activities of new financial intermediaries, if effective and credible mechanisms for delivering those subsidies can be found. For example, Chile's CUBOS programme auctioned government-funded vouchers amongst banks willing to lend to small and medium enterprises. Banks and leasing companies purchased these vouchers at auction at an average of about 75 cents on the dollar, but were then able to use these vouchers at par to purchase private insurance against loan non-repayment from private insurers. The system was set up as a deliberate attempt to stimulate new private intermediation and at the same time target loan resources to small businesses without an explicit government loan guarantee fund (Arrau 1998). It helped foment the entry of new participants in the market for small business loans and private loan insurance.

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[12] For example Hernando de Soto (2000) argues that the lack of clearly defined legal property rights limits poor people in developing countries from utilizing their assets to leverage additional resources. Klein (1992) discusses the performance of private credit bureaus.

Government guarantee funds in and of themselves may help local intermediaries to leverage outside funds from private sources. Guarantee funds act as guarantors and monitors of the monitoring intermediaries who leverage funds from outside the village. But developing countries have had many very bad experiences with guarantee funds. To be effective, these funds have to themselves engage in intensive monitoring activities. Because the funds are government entities, they usually are prevented from using high-powered incentives to ensure bureaucratic effort.

Non-governmental agencies have had some success in overcoming the problems of intermediation identified above. Some microfinance institutions, for instance, ameliorate the delegated monitoring problem of limited liability by substituting (or more often, complementing) monitoring by a delegate with peer monitoring.[13] They also mitigate moral hazard problems by narrowing the product offering to products where the scope for moral hazard is small. On the lending side, loans are kept small and repayment periods short. Frequent group meetings with regular repayments help identify problem areas where monitoring can become more intensive.

Tentative efforts to intermediate micro-insurance are similar. The programmes are sometimes bundling credit provision with death insurance or basic health insurance, where borrowers are obliged to purchase the services of a non-fee based health clinic. The insuree is free of course to seek alternative treatment, but the local health clinic provides a floor basic health service should need arise. Making this participation mandatory eliminates the adverse selection problem. Most medical costs in developing countries are associated with easily cured or prevented disease, so moral hazard costs are not a large concern.[14]

There would see to be opportunities for more bundling of this kind. For instance, there are other sources of risk that might be profitably insured. One important one for farmers and microborrowers is commodity price risk. In many microcredit programmes loans are taken for the purpose of stocking commodities on the expectation that prices will rise, as they generally do. But prices are risky, and sometimes they fall. A microfinance institution might find that instead of small loans where repayment potential is largely independent, its portfolio consists of thousands of people who have bet on the same expected movements in agricultural prices. Offering price insurance seems to be a natural way to increase expected benefits for both borrowers and microfinance institution.

The microfinance institution has to play the intermediary, in the absence of well-developed forward, futures or options markets. There seems to be little research in understanding the specific reasons why such simple insurance contracts are not offered

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[13] A large literature has developed on the subject of joint liability loans. Early contributions include Stiglitz (Stiglitz 1990) and Besley and Coate (1995). Only a few papers have however explicitly modeled how endogenous monitoring costs within the group help determine the optimal choice between joint-liability and individual liability intermediary structures (Conning 2000, Madajewicz 1997).

[14] Providing catastrophic health insurance is another matter altogether. Insuring income losses due to sickness is especially difficult because of possible collusion between doctors and patients. In largely illiterate societies it is hard to see how any system for longer-term or more costly illnesses could be insured in a sustainable way. Families must bear the costs of self-insurance.

by existing intermediaries. Gilbert (1999) speculates that rural banks in developing countries lack even the basic expertise needed to price such contracts (estimating future crop prices, monitoring crop developments, analyzing historical price patterns). If sold in advance, for small sums to rural microfinance clients, the possibilities of collusion and price manipulation seem small. Demand for such contracts may well be small, but then we are back to assuming that the lack of intermediation really is nothing more than a lack of demand because of relatively inexpensive local intermediation, self-insurance, and crop and activity diversification.

With regards to the distrust of intermediaries, it is worth recalling that microfinance intermediary institutions are usually motivated by low-powered incentives. They are non-profits, and often bundle their services with rhetoric emphasizing social change or with expenditures on local public services. These features give the intermediary more credibility than someone intermediating for profit; they are perhaps perceived as different from the state.

Microfinance institutions also use a 'blanket' approach that potentially mitigates the political economy problems. Because they are almost invariably regional in scope, the programmes give incentives for elites to embrace rather than undermine projects. Elites are enmeshed in their own political struggles with elites from other regions, for control of regional institutions. Programmes that aid elites in other villages must then be embraced by local elites. While their relative position might suffer within the village, they may prefer that to losing ground in their regional struggles among elite groups.

7 Conclusion

The financial system of an economy is the nexus of contracts and intermediary structures that comprise an often-complex web of transactions and agency relationships between different parties in the system. Financial systems vary immensely in structure and complexity. In some societies where regional or national level financial intermediation is weak, the financial system may be thought of as a set of islands of local financial transactions, but with few bridges or communication links between islands. Where financial intermediation is more developed, a dense network of actual or potential bridges across islands will be in place.

Bridging the gaps between local, informal financial institutions and national institutions is something that happens in the course of the development process. Financial markets become more integrated, and people benefit from the specialized services of financial intermediaries. But financial integration can happen rapidly or slowly. We have reviewed some basic explanations of the slowness of intermediation. The first account focused on problems of information asymmetry and non-exclusive contracting. The second focused on recent literature on lock-in, suggesting that individuals already imbricated in existing financial networks may have few incentives to 'jump ship' to deal with an intermediary from the more anonymous 'national' market. The third offered an anthropological account more appropriate to village and 'closed' societies, where norms against cooperation with outsiders may be strong. The fourth noted a standard political economy model of resistance to new institutions because of possible shifts in relative bargaining power.

We should again emphasize that the kinds of supply-side innovations and issues we have discussed are only relevant once the basic groundwork of enforceability has been laid, through the maintenance of legitimate legal institutions. Given the enormity of that problem for many of the poorest countries, especially in sub-Saharan Africa, and given that we know so little about the empirical relevance of the theories discussed here, policymakers should be prudent at this point, looking to undo the negative effects of bad regulatory policies first rather than introduce new programmes and regulations.

Table 1

Moral hazard and intermediaries in financial transactions

	Action of intermediary	*Institutions' concerns about agent*	*Villagers' concerns about agent*	*Agents' concerns about institutions*	*Agents' concerns about villagers*
Money transfer	Receive and disburse money over space	Agent might collude with others to disburse funds fraudulently	Agent might miscount or demand bribe		Villager might falsify identity
Savings	Receive and disburse money over time	Agent might not do proper book-keeping	Agent might deliberately falsify savings entries in passbook	Institution might not pursue sound financial management; might accuse agent of embezzlement	Villager might claim made deposits
Pawning	Receive goods and disburse money over time and subject to conditions	Agent might buy and sell goods on the side	Agent might sell goods early		Villager might pawn stolen goods
Lending	Disburse and collect money over time	Agent might not monitor or enforce repayment, might collude with borrower, or might demand bribes	Agent might not record loan repayments; might disburse less than registered loan	Institution might not pursue sound financial management; might accuse agent of embezzlement	Villager might deliberately default or might undertake riskier action
Insurance	Enter contingent contracts, verify outcomes, disburse claims	Agent might not verify claims, or might collude with insuree, or might demand bribes	Agent might deny claim arbitrarily, or might demand bribe		Villager might misrepresent state of affairs or might undertake riskier action
Safety net	Verify outcomes, disburse claims	Agent might disburse funds to ineligble recipients, might demand bribes	Agent might deny claim arbitrarily, or might demand bribe	Institution might make proper performance too costly	Villager might misrepresent state of affairs

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